OWNERS MANUAL

Handheld Drill

MODEL:

HHD323

FORM <<HHD323 rev 10/2009

NORTON

Clipper

WARRANTY

Norton warrants all products manufactured by it against defects in workmanship or materials for a period of one (1) year from the date of shipment to the customer.

The responsibility of Norton under this warranty is limited to replacement or repair of defective parts at Norton's Stephenville, Texas factory, or at a point designated by it, of such part as shall appear to us upon inspection at such point, to have been defective in material or workmanship, with expense for transportation borne by the customer.

In no event shall Norton be liable for consequential or incidental damages arising out of the failure of any product to operate properly.

Integral units such as **gasoline engines**, **electric motors**, **batteries**, **tires**, **transmissions**, **etc**., are excluded from this warranty and are subject to the prime manufacturer's warranty.

This warranty is in lieu of all other warranties, expressed or implied, and all such other warranties are hereby disclaimed.

Important: Before placing equipment in operation, record the following information.

MODEL:_____ SERIAL NO._____

PURCHASE FROM: _____

ADDRESS: _____

CITY_____ STATE _____ ZIP _____

TELEPHONE NO. _____

Before using this equipment, make sure that person using it read and understand the instructions in this owner's manual.

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Read Owners Manual Before Use

Safety Alert Symbol: Information Following This Symbol Is Very Important.

I. PREPARATION

A. Safety Precautions

Important! The following safety precautions must always be observed.

Hazard Symbols

Fuel (gasoline) is extremely flammable and its vapors can explode if ignited. Store gasoline only in approved containers, in well-ventilated, unoccupied approved areas, and away from sparks or flames. Do not fill the fuel tank while the engine is hot or running. Do not start the engine near spilled fuel. Never use the fuel as a cleaning agent.

Engine components can get extremely hot from operation. To prevent burns, do not touch the engine or related parts while the engine is running or immediately after it is turned off. Never operate the engine with any heat shields or guards removed.

Keep all guards in place when operating any piece of equipment

Keep hands, feet, hair, and clothing away from all rotating parts

Lethal Exhaust Gas use only in well ventilated areas. Engine exhaust gases contain poisonous carbon monoxide, which is orderless, colorless, and can cause death if inhaled. Avoid inhaling exhaust fumes, and never run the engine in a closed building or confined area

Never tamper with the governor components of settings to increase the maximum speed. Severe personal injury and damage to the engine or equipment can result if operated at speed above maximum. Always obey the maximum speed rating of blade.

⚠ WARNING

Dust and Silica Warning

Grinding/cutting/drilling of masonry, concrete, metal and other materials can generate dust, mists and fumes containing chemicals known to cause serious or fatal injury or illness, such as respiratory disease, cancer, birth defects or other reproductive harm. If you are unfamiliar with the risks associated with the particular process and/or material being cut or the composition of the tool being used, review the material safety data sheet and/or consult your employer, the material manufacturer/supplier, governmental agencies such as OSHA and NIOSH and other sources on hazardous materials and make certain to comply with all product warnings and instructions for the safe and effective use of the material being cut. California and some other authorities, for instance, have published lists of substances known to cause cancer, reproductive toxicity, or other harmful effects.

Control dust, mist and fumes at the source where possible. In this regard use good work practices and follow the recommendations of the manufacturer/supplier, OSHA/NIOSH, and occupational and trade associations. Water should be used for dust suppression when wet cutting is feasible. When the hazards from inhalation of dust, mists and fumes cannot be eliminated through engineering controls such as vacuum and/or water mist, the operator and any bystanders should always wear a respirator approved by NIOSH/MSHA for the material being cut.

Use Approved:

Eye Protection

Hearing Protection

Respiratory Protection

Head Protection

1. **Know your drilling machine! Read the Owner's manual carefully. Learn the operation, application and limitations, as well as the specific potential hazards peculiar to this equipment.**
2. **NEVER connect the green [or green & yellow] wire to a live terminal.**
3. **Use only three-wire grounded extension cords suitable for use outdoors and of sufficient gage to accommodate power requirements.**
4. **Replace frayed or damaged extension cords.**
5. **Keep the work area clean avoiding cluttered work areas.**
6. **Consider the work area environment!**
   - **Do not expose power tools to rain.**
   - **Wear rubber boots to further insulate yourself from the drill.**
   - **Mop up all excessive water around the work area before and after drilling.**
   - **Keep the work area well lit.**
7. **Use extreme caution when drilling through floors. Provide for protection of all personnel and material below the area. Cores generally drop from the drill bit at the completion of the hole.**
8. **Keep visitors away. Do not let visitors contact tool or extension cord. All visitors should be kept at a safe distance from the work area.**
9. **Do not force the bit into drilling surface.**
10. **Dress properly for the work being performed.**
    - **Do not wear loose clothing or jewelry which can get caught in moving or rotating parts.**
11. **Don't abuse the cord. Never carry the tool by the cord or yank the cord to disconnect the plug from the receptacle.**
12. **Don't overreach! Keep proper footing and balance at all times. The slippery surface created during the drilling operation results in unstable footing.**
13. **ALWAYS disconnect the power before servicing or changing accessories or bits.**
14. **ALWAYS check, then make sure wrenches are removed from the motor spindle and bit adapter before connecting power or starting the drill motor.**
15. **ALWAYS make sure power switch is in "off" position before connecting drill to power.**
16. **Never drill by hand a bit that is over 4" (100 mm) in diameter. Use a drill stand for bits over 4" (100 mm) in diameter.**

You Are Responsible For Your Safety!!!

I. PREPARATION

B. Assembly

The HHD323 handheld drill is shipped completely assembled except for core bit adapters, core bit, and the collar handle. Inspect the drill for shipping damage. If any damage is found, contact the shipper immediately and file a freight claim. Saint-Gobain Abrasives, Inc. is not responsible for any freight-related damages.

Be sure you have the following items:

1. HHD323 handheld drill
2. 27mm Wrench
3. 12” Adjustable wrench
4. 5mm Allen wrench
5. Adapter M18 female to 5/8” male
6. Adapter M18 female to 1-1/4” male
7. Quick Detach Water Hose Adapters
8. Carrying case

Read and understand the remaining sections of this Owner's Manual.

C. Specifications

Dimensions/Weight	
Length	18.11" (460 mm)
Width	4.33" (110 mm)
Height	9.84" (250 mm)
Weight	12.1 lbs
Engine	
Engine Type	Single Phase
Volt	115 v
Amp	12 amp
Demand	1350 w
RPM	0-2200 rpm
Bit Capacity	1” (25 mm) – 3” (76 mm)

D. Electrical Supply

The HHD323 handheld drill is furnished with a 115 volt, single phase motor. This motor operates within a power range of 110 to 120 volts. Serious damage can result if the supply line voltage does not fall within this range.

The following wire sizes are recommended when using an extension cord:

Wire Gauge (AWG)	Length Of Wire
Number 14	25 Feet
Number 12	50 Feet
Number 10	75 Feet
Number 08	100 Feet

For Best performance use 50 feet of 10 gauge extension cord. All extension cords must be one piece, free of any damage (frays, cracks, breaks, burn marks, exposed wires, and loose ends).

F. Generator:

If a generator must be used, it must be of 4.1kW (4,100 W) or larger. The generator must have a 15A circuit or greater and capable of providing a minimum of 4.1kW at the required voltage. Under size generators will cause motor damage and is not covered under warranty.

G. Grounding Instructions:

Grounding protects the operator from electric shock. At the time of delivery of the motor is equipped with an approved three-conductor cord and three-prong grounding type plug. The green (green/yellow in CEE-Versions) conductor in the cord is the grounding wire. **NOTE: Never** connect the green (green/yellow) ground conductor (wire) to a live terminal. In case of doubt concerning the ground of the receptacle, call a qualified electrician and have it checked for proper ground.

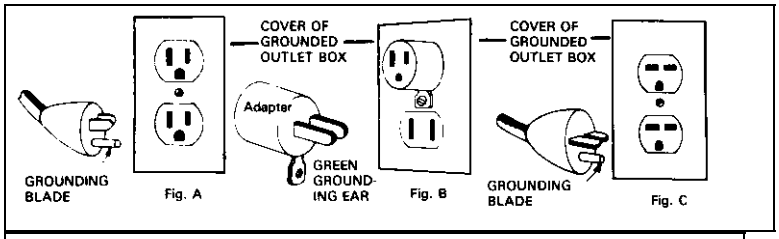
- Before connecting the drill to the power source, make sure that the voltage and cycles shown on the name plate of the motor are the same as the available electrical power supplied.
- Always properly ground the core drill before attempting to start the motor. The presence of water during the drilling operation requires that the drill always be properly grounded.
- **<u>NEVER</u> connect the green (ground) wire to a live terminal!**

H. Electrical Connections:

The installation of cables, plugs, and switches must be made **ONLY** by an authorized electrician. All installations must be made according to the local regulations for electrical equipment. All components must meet local requirements. For additional information see the National Electrical Code (NEC) for the United States and Canadian Electrical Code for Canada.

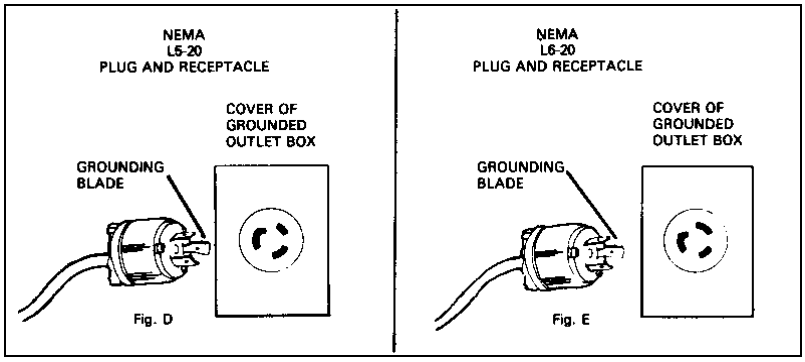
The use of a 3-prong adapter is prohibited in Canada by the Canadian Electrical Code.

Fig. A shows a standard NEMA 5-15 plug (male) and receptacle (female), which should be used with the HHD323 Hand Held Core Drill. If the electrical receptacle has two (2) conductors as shown in *Fig. B* an adapter is available from a local electrical supplier for connecting the NEMA 5-15 plug to an NEMA 1-15. When using a NEMA 1-15 two prong receptacles the green grounding ear extending from adapter must be connected to a permanent ground. No adapter is available for *Fig. C* plugs as this is a 230v receptacle.



NOTE: RECEPTACLE MUST BE GROUNDED FOR SAFE USE OF ADAPTER:
IF IN DOUBT CALL A QUALIFIED ELECTRICIAN AND HAVE THE RECEPTACLE CHECKED FOR GROUND

To connect twist lock plugs like those shown in *figures D* and *E*, insert the plug into a matching outlet. When the plug is fully inserted, turn it clockwise until it locks. This prevents the plug from being pulled out accidentally. To remove the plug, twist it counterclockwise to unlock it and remove it from the outlet. Adapters are available from a local electrical suppler to convert a NEMA 5-15 plug to a twist lock.



- For Additional Safety Use A Ground Fault-Interrupter (GFCI) Device.
- Do Not Use The Drill In Inflammable, Gaseous, Or Explosive Atmosphere
- Do Not Expose The Drill Motor To Rain Or Use In Damp Or Wet Locations
- Do Not Abuse The Cord, Or Carry Or Lift The Motor By The Cord
- Keep The Power Supply Cord Away From Humidity And Water
- Make Sure That The ON/OFF Switch Is In The “OFF” Position Before Plugging Into A Power Supply
- Unplug The Drill Before Changing A Drill Bit
- Unplug The Power Cord When Attaching The Water Supply, Also Turn The Water Valve To The “Off” Position Before Attaching
- Do Not Use If Parts Of The Motor Housing Are Missing Or Damaged
- Do Not Use If The Power Cable Or Extension Cable Is Damaged
- Do Not Make Any Attachments, Adjustments, Or Accessory Changes With The Unit Plugged In
- Always Use The Proper Length/AWG For Extension Cords (See The Section Titled Electrical Supply)

♦ If Water Comes Out Of The Over Flow Bore (Item 3) Stop The Drill Operation And Replace The Water Ring Seal Immediately

♦ DO NOT Use Or Reuse Waste Water. Dirt And Slurry May Damage The Ring Seals

- Prevent Water From Spraying On Any Part Of The Electrical Motor Or Cables

II. OPERATION

A. Core Bit Installation

Adapters are needed to install specific sized core bits.

1. Using a wrench to firmly hold the output shaft, screw the core bit onto the spindle until snug.

2. Placing one wrench on the machined flats of the output shaft and one wrench on the end adapter of the core bit tighten the bit on the spindle. **Note:** Attempting to turn the bit by the barrel rather than by the adapter nut may break the weld between the adapter nut plate and the barrel.

When using any Hand Held Drill never hand drill a bit larger than 4" (100 mm) in diameter. Only use a Drill Stand for drill bits larger than 4" (100 mm) in diameter.

B. Water Supply:

Always disconnect the power supply before attaching or detaching the water system to the Clipper HHD323 Hand Held Drill

1. Attach the Female Quick Coupler to the water supply hose. **NOTE:** *A pressure tank can only be used for small hole drilling. The pressure tank should not be lower than 7 PSI (0.5 bar)*
2. Place the Water Valve (Tap) in the "Closed" position
3. Attach the Female Quick Coupler to the Male Quick Coupler by pulling back on the Female Quick Coupler retaining ring and pressing it gently into the Male Quick Coupler.
4. Turn on the water supply
5. Slowly turn the Water Tap to the "Open" position

To remove the water supply from the Clipper Hand Held Drill:

1. Slowly turn the Water Tap to the "Closed" position
2. Turn "Off" the water supply
3. Detach the Female Quick Coupler from the Male Quick Coupler by pulling back on the Female Quick Coupler retaining ring and pulling it gently way from the Male Quick Coupler.
4. If the job is finished for the day see the section Water System Maintenance

C. Drilling Operation:

The performance of any diamond core bit depends heavily on the use of proper drilling technique. Although drilling conditions and materials may vary, following specific guide lines insures faster drilling speeds and longer bit life.

1. Make sure there is no movement in the drill that would cause the core bit to bind in the hole.

2. Insure that the hole is constantly flushed of abrasive fines by supplying a sufficient flow of water.

3. Slowly guide the bit into the hole so that there is no skidding or movement of the drill. The entire circumference of the core bit should penetrate the drilling surface before additional pressure is applied to the handle.

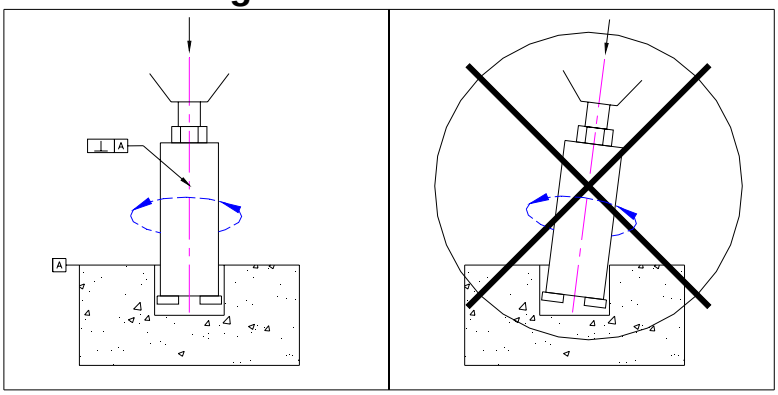
4. Exert steady pressure while drilling. NEVER force the bit into the material!

5. Do not stop the flow of water or rotation of the bit while the core bit is drilling.

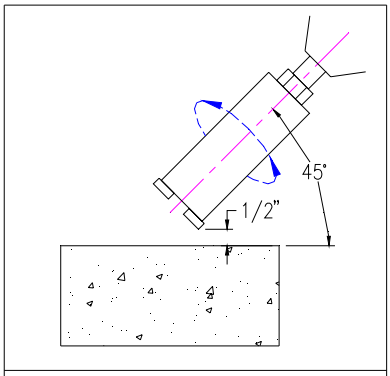
6. Check the core bit if the drilling rate decreases noticeably. The slowing penetration rate generally indicates that the bit is in need of reconditioning.

D. Hand Held Drilling Technique:

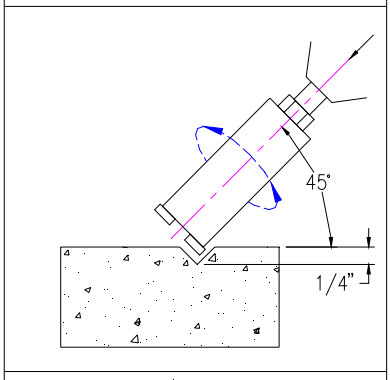
Most drill problems occur due to improper starting, drilling method, and the wrong power supply and/or extension cord length/AWG. To extend the life of the drill the following Hand Held drilling operation instructions must be followed. Not following these instructions **will damage the tool and void the warranty!!!**



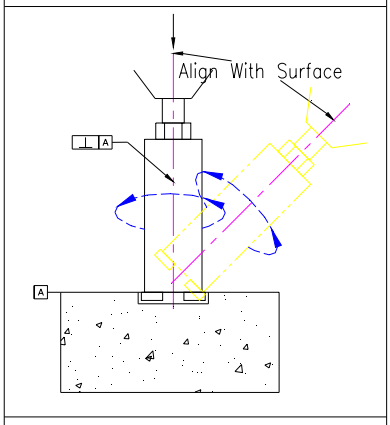
Keep The Drill Perpendicular To The Work At All Times.
Do Not Force The Drill



1. Start The Drill At 45° To The Work Surface With The Bit About 1/2” From The Work Surface. The Drill Must Be Running At Full Speed Before The Bit Comes In Contact With The Work Piece

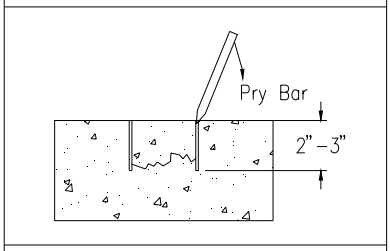


2. Slowly Lower The Bit Into The Work Piece Until The Drill Bit Has Cut About 1/4” In To The Wok Piece



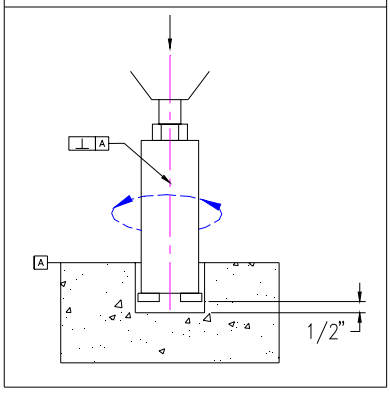
3. Slowly Bring The Drill Perpendicular To The Work Piece (Slide Friction Due To Drilling At An Angle Will Cause The HD Hand Held Drill Unit To Vibrate And Possibly Shut The Drill Unit Off)

Let The Drill Do All Of The Work **DO NOT FORCE THE DRILL INTO THE WORK PIECE!!!!**



4. Remove The Core From The Hole About Every 2” To 3”

Do Not Stop The Drill Until It Is Out Of The Hole



5. When Restarting The Hand Held Drill Bring The Drill Up To Full Speed With The Bit About 1/2” From The Bottom Of The Hole And Perpendicular With The Hole. Slowly Lower The Drill Unit It Comes In Contact With The Work Piece

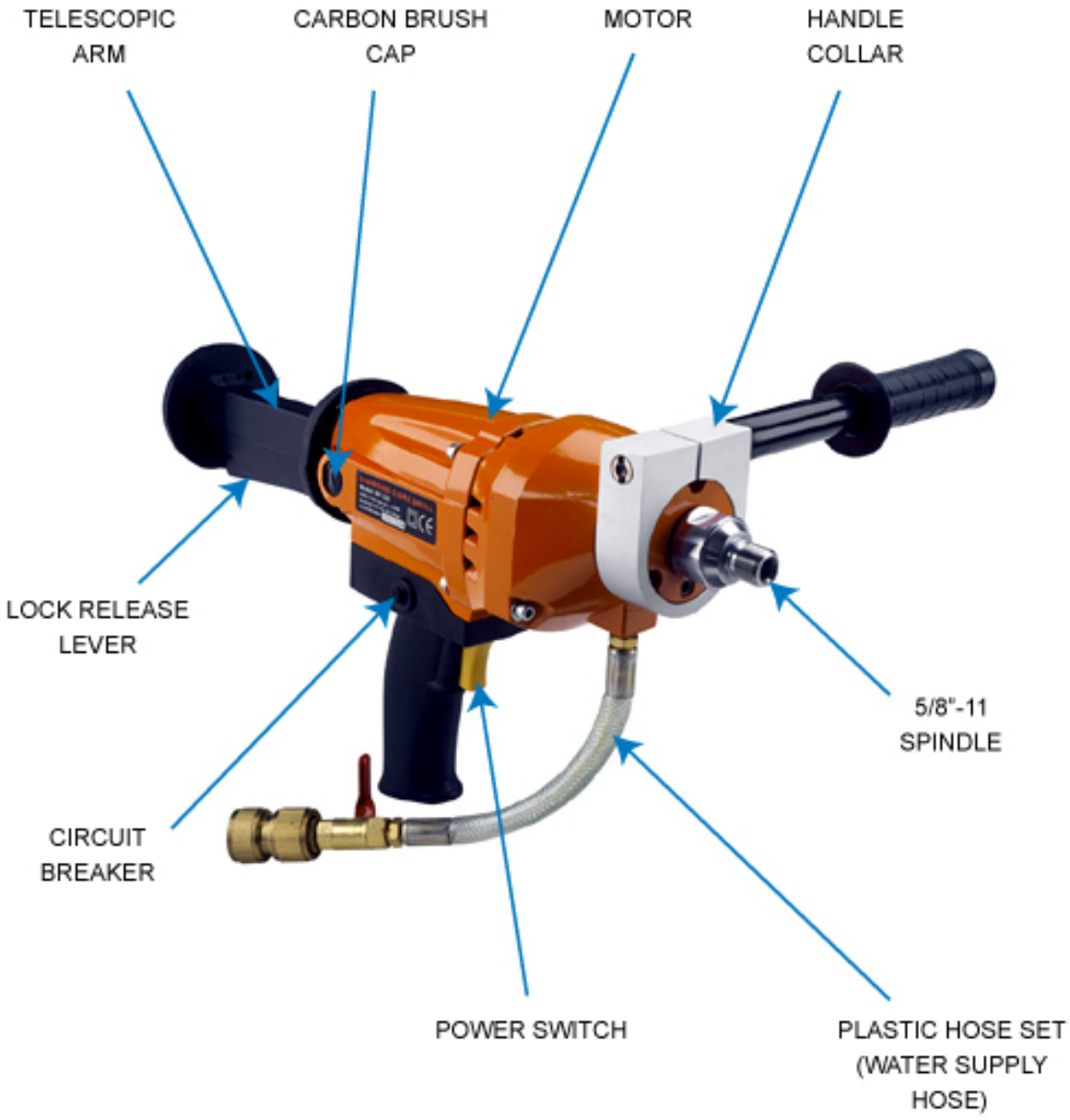
Repeat Steps 4 and 5 Until The Job Is Completed

If Steel Is To Be Drilled Use The Lowest Speed And Reduce Feed Pressure

When drilling by hand use a drill bit that is has a bond that is one (1) class softer than you would normally use with a Rig Mounted drill.

III. COMPONENT DESCRIPTION

A. Diagram



IV. PARTS LIST SECTION

A. Ordering Information

1. List model number and serial number of machine.

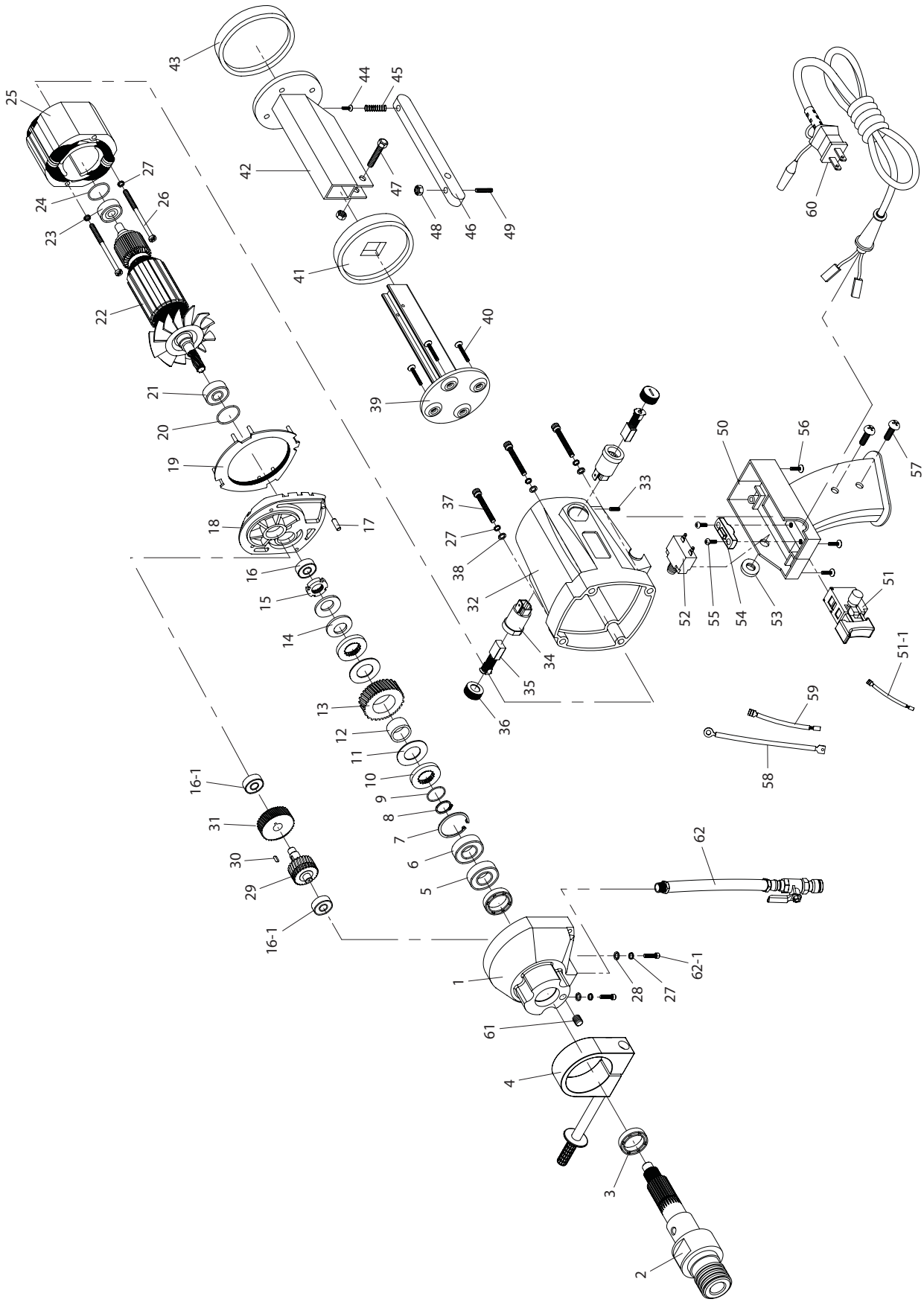
2. List part number and serial number of part not the item number.

3. Wherever alternate parts are shown due to product improvement, inspect the part you have and provide additional description as necessary.

4. Specify mode of shipping desired, such as, parcel post, truck, U.P.S., best way, etc.

For the nearest Clipper distributor call 1-800-554-8003

NOTE: All parts are sold as individual (each) unless noted otherwise



B. HHD323 Explode View Parts Drawing

C. HHD323 Parts Listing

Item	DESCRIPTION	Qty	Part No
1	GEAR CASE HHD323	1	244004
2	SPINDLE HHD323	1	244005
3	OIL SEAL 32D 22d DOUBLE LIP SEAL (7SS)	2	244006
4	HANDLE COLLAR HHD323	1	244001
	HANDLE AND ATTACHMENT BAR HHD323	1	244000
5	BEARING RADIAL 6003LLU D35 d17	1	244007
6	BEARING RADIAL 6003ZZ D35 d17	1	244008
7	INTERNAL C-CLIP M35	1	244009
8	EXTERNAL C-CLIP M17	1	244010
9	EXTERNAL C-CLIP M9	1	244011
10	PLATE HHD323	2	244012
11	PLATE FRICTION HHD323	2	244013
12	METAL COLLAR HHD323	1	244014
13	GEAR FIRST HHD323	1	244015
14	WASHER CONICAL D28 d12.2	2	244016
15	NUT SLOTTED	1	244017
16	BEARING RADIAL 608ZZ D22 d8 (CM)	1	244018
16-1	BEARING RADIAL 608ZZ D22 d8 (C2)	2	244019
17	PIN M5X15 DOWEL	1	244020
18	DIAPHRAGM HHD323	1	244021
19	BAFFLE HHD323	1	244022
20	O-RING 24x2mm DIN3771 NBR872 207254	1	207254
21	BEARING RADIAL 609ZZ (C3)	1	244023
22	ARMATURE HHD323	1	244024
23	BEARING RADIAL 608ZZ (C3)	1	244025
24	WASHER M15 WAVE	1	244026
25	MAGNETIC FIELD HHD323	1	244027
26	SCR 3/16"-12 X 2-1/2" SELF TAPPING PHILLIPS HEAD	2	244028
27	WASHER M5 LOCK DIN127B	2	502088
28	WASHER M5 DIN125 FLAT	2	235065
29	PINION BUSHING SECOND HHD323	1	244030
30	KEY 3Xx16mm	1	244031
31	GEAR SECOND HHD323	1	244032
32	MOTOR HOUSING HHD323	1	244033
33	SCR M5 X 10 0.8 DIN916 CUP POINT SET	2	241027
34	BRUSH HOLDER HHD323	2	244034
35	BRUSH (2) HHD323	2	244035
36	BRUSH CAP (2) HHD323	2	244035
37	SCR M5 X 10 0.8 DIN912 SHCS	4	244036

C. HHD323 Parts Listing

Item	DESCRIPTION	Qty	Part No
38	WASHER M5 DIN125 FLAT	4	235065
39	ARM BASE TELESCOPIC HHD323	1	244037
40	SCR 5/32”-16 X 5/8" SELF TAPPING PHILLIPS HEAD	4	244038
41	RUBBER COVER HHD323	1	244039
42	ARM TELESCOPIC HHD323	1	244040
43	RUBBER SHOULDER PAD HHD323	1	244041
44	SCR M3.5 X10 SELF TAP PHILLIPS DIN7981	1	244042
45	SPRING SHOULDER STOCK HHD323	1	244043
46	LOCK RELEASE LEVER HHD323	1	244044
47	SCR M6 X 35 1.0 DIN912 SHCS	1	244045
48	NUT M6 1.0 DIN934 HEX	2	300833
49	SCR M6 x 25 1.0 DIN933 HHC	1	300867
50	HAND GRIP HHD323	1	244003
51	SWITCH POWER HHD323	1	244002
51-1	WIRE SWITCH HHD323	1	244046
52	CIRCUIT BREAKER 9A HHD323	1	244047
53	WASHER THERMAL PROTECTOR HHD323	1	244048
54	CABLE CLAMP PLATE THERMAL PROTECTOR HHD323	1	244049
55	SCR 5/32"-16 X 1/2" SELF TAPPING PHILLIPS HEAD	2	244050
56	SCR 5/32"-16 X 1-1/2" SELF TAPPING PHILLIPS HEAD	4	244051
57	SCR 5/32"-16 X 3/4" SELF TAPPING PHILLIPS HEAD	2	244052
58	WIRE GROUND HHD323	1	244053
59	WIRE HHD323	1	244054
60	POWER CABLE MAIN HHD323	1	244055
61	PLUG	1	244056
61-1	SCR M5 X 25 0.8 DIN912 SHCS	1	244057
62	WATER HOSE ASSEMBLY HHD323	1	244058
Optional	WRENCH 27mm OPEN END	1	244059
Optional	WRENCH ADJUSTIBLE 12"	1	244060
Optional	WRENCH 5mm HEX KEY (ALLEN)	1	244061
Optional	ADAPTER M18 TO 5/8"-11 MALE	1	244062
Optional	ADAPTER M18 TO 1-1/4"-7 MALE	1	244063
Optional	CASE CARRYING HHD323	1	232176

NOTES:

Saint-Gobain Abrasives
2770 West Washington
Stephenville, TX 76401
Phone: 800-554-8003
Fax: 800-443-1092

WARNING

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints,**
- **Crystalline silica from bricks and cement and other masonry products, and**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.